

REMARKS

Favorable reconsideration of this application, as presently amended, is respectfully requested.

Claims 1-21, 24, 26-53, 56, and 58-65 are pending, with Claims 1-19, 28-51, and 60-65 being withdrawn as directed to non-elected inventions. Claims 24 and 56 have been amended by the present amendment. No new matter has been added.

In the outstanding Action, the drawings were objected to as not showing all elements of the claims; Claims 20-21, 24, 26-27, 52-53, 56, and 58-59 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite; Claims 20-21, 52, and 53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,933,257 to Kurita (hereafter “the ‘257 patent”) in view of U.S. Patent No. 5,485,203 to Nakamura et al. (hereafter “the ‘203 patent”); Claims 24, 27, 56, and 59 were rejected as unpatentable over the ‘257 patent in view of the ‘203 patent, and further in view of U.S. Patent No. 5,511,137 to Okada (hereafter “the ‘137 patent”) and U.S. Patent No. 4,887,252 to Miyakawa et al. (hereafter “the ‘252 patent”); and Claims 26 and 58 were rejected under 35 U.S.C. § 103(a) as unpatentable over the ‘257 patent in view of the ‘203 patent, the ‘137 patent, the ‘252 patent, and further in view of Suino et al. (U.S. Publication 2004/0013310, hereafter “the ‘310 publication”).

In response to the objection to the drawings, Applicants respectfully submit that the original drawings show all claimed features. For example, the luminance signal magnification unit recited by Claim 24 is shown in a non-limiting example in Figure 18, as element 242, and described in the associated description. Accordingly, Applicants traverse the objection to the drawings and respectfully request that the objection to the drawings be withdrawn.

Applicants respectfully traverse the rejections of Claims 20-21 and 52-53 under 35 U.S.C. § 112, second paragraph. The outstanding Office Action asserts that the limitation

“based on a ratio between the at least one component signal of the color image signals ... and the at least one further component signal,” is “too broad” and thus indefinite.¹ Claims 20 and 52 have been amended to clarify that the second magnification is performed *based on a ratio between the data of the at least one component signal ... and the data of the at least one further component signal of the color image signals...*, and the magnified data of the at least one component signal magnified by the first magnification unit. Applicants respectfully submit that one skilled in the art will immediately understand what is meant by a ratio of data of one component signal to data of another component signal. Further, Applicants’ specification describes such a ratio, in a non-limiting example, as a ratio of R (red) component data to G (green) component data.² Further, the MPEP § 2173.04, entitled “Breadth is not Indefiniteness,” states “breadth of a claim is not to be equated with indefiniteness.”³ Independent Claim 52 is likewise definite for the same reasons discussed above. Claims 21 and 53 were rejected due to their dependence on Claims 20 and 52, and are therefore also definite for the reasons stated above.

With regard to Claim 24, the outstanding Office Action asserts that “a luminance reference pixel area of wide extent” is indefinite.⁴ Claim 24 has been amended to recite *a luminance reference pixel area of a first extent, and a color reference pixel area of a second extent narrower as compared with the first extent*. Applicants respectfully submit that one skilled in the art will understand what is meant by the relationship of the two reference pixel areas recited in Claim 24. Claim 56 has been similarly amended to recite a first extent and a second extent. Claims 26-27 and 58-59 were rejected due to their dependence on Claims 24 and 56, and are therefore also definite as discussed above.

¹ Outstanding Office Action page 6, lines 3-4.

² Applicants’ original specification, page 56, line 9 to page 57, line 2.

³ MPEP § 2173.04.

⁴ The outstanding Office Action, page 6, lines 13-14.

Accordingly, Applicants respectfully request that the rejections of Claims 20-21, 24, 26-27, 52-53, 56, and 58-59 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Briefly summarizing, Claim 20 is directed to an image processing apparatus which includes an input unit that inputs color image signals, and a magnification unit that magnifies the color image signals input by the input unit. The magnification unit includes a first magnification unit that magnifies *data of at least one component signal of the color image signals represented by the plurality of color component signals*. The magnification unit further includes a second magnification unit that magnifies *data of at least one further component signal of the color image signals*, other than the data of the at least one component signal of the color image signals magnified by the first magnification unit, *based on a ratio between the data of the at least one component signal* of the color image signals to be magnified by the first magnification unit *and the data of the at least one further component signal* of the color image signals to be magnified by the second magnification unit, *and the magnified data of the at least one component signal* magnified by the first magnification unit.

The outstanding Office Action asserts that the '257 patent describes an image processing apparatus as recited by Claim 20. Specifically, the outstanding Office Action asserts that zooming unit 235 of Figure 4a of the '257 patent is the same as the magnification unit recited by Claim 20.⁵ The outstanding Office Action further asserts that zooming unit 235 of Figure 4a is also a first magnification unit as recited by Claim 20.⁶ However, Claim 20 recites a first magnification unit that magnifies *at least one component signal of the color image signals represented by the plurality of color component signals*. Element 235 in Figure 4a of the '257 patent is marked as "zooming unit C," and does not magnify *any* component signals of color image signals. In fact, zooming unit C takes as input a 2-bit

⁵ Outstanding Office Action, page 7, lines 13-14.

⁶ Outstanding Office Action, page 7, line 18.

value, designated by the numeral “2” above an arrow connecting element 237 (DL3) and element 235 (zooming unit C). “Zooming unit C 235, and a delay unit ... 237 are circuits which perform timing adjustment to synchronize the image signal and the area signal with each other.”⁷ Therefore, zooming unit C (element 235) clearly does not magnify any component signals of color image signals, but rather performs **timing adjustment**. Thus, the assertion by the outstanding Office Action that zooming unit C (element 235 of Figure 4a) of the ‘257 patent is the same as a first magnification unit, as recited by Claim 20, is erroneous.

The outstanding Office Action further asserts that the ‘257 patent describes the first magnification unit and the second magnification unit as recited by Claim 20, and supports this assertion by referencing column 7, lines 37-43 of the ‘257 patent, and column 8, lines 3-24 of the ‘257 patent. The ‘257 patent describes that in zooming unit B (element 234 of Figure 4b) an enlargement process is performed, where the outputs are four component signals, C (cyan), M (magenta), Y (yellow), K (black).⁸ Further, the ‘257 patent describes how the **same component signals** (C, M, Y, K) are subjected to a zooming process by a zooming unit A (element 211 of Figure 4b).⁹ Thus, zooming unit A magnifies the same component signals as zooming unit B. The outstanding Office Action appears to make an assertion that the signals C, M, Y, and K are somehow different signals because they have passed through certain signal processing, but one skilled in the art will understand that the image signal processed by zooming unit A still has the same component signals, and zooming unit A is magnifying **all** of them, not one further component signal of the color image signals **other than the at least one component signal**, as recited by Claim 20. To summarize, neither zooming unit C (element 235 of Figure 4a), nor zooming unit B (element 234 of Figure 4b) read on the first magnification unit recited by Claims 20, nor does zooming unit A (element 211 of Figure 4b) read on the second magnification unit recited by Claim 20.

⁷ ‘257 patent, column 9, lines 10-13.

⁸ ‘257 patent, column 7, lines 11-27.

⁹ ‘257 patent, column 8, lines 12-15.

Accordingly, the '257 patent fails to teach or suggest *a first magnification unit that magnifies data of at least one component signal of the color image signals represented by the plurality of color component signals, and a second magnification unit that magnifies data of at least one further component signal of the color image signals, other than data of the at least one component signal of the color image signals magnified by the first magnification unit*, as recited by Claim 20.

Further, the outstanding Office Action acknowledges that the '257 patent fails to teach or suggest a second magnification unit that magnifies at least one further component signal of the color image signals *based on a ratio between the at least one component signal of the color image signals ... and the at least one further component signal*, and asserts that the '203 patent cures this specific deficiency.¹⁰ Specifically, the outstanding Office Action asserts that the '203 patent describes this feature in column 13, lines 45-50, and shown in amplifiers 34a and 35a. The cited text in the '203 patent states:

On the contrary, when the outputs of the ROM tables 21A and 21B indicate **occurrence of color misregistration** having a small quantity of color misregistration or, for example, a quantity of color misregistration rating below the level 1 in FIG. 8, the synthesizing circuits 24A and 24B of this embodiment decrease the ratios of color difference data read from the image memories 7A and 7B and increase the ratios of color difference data read from the 1H line memories 4A and 4B, then synthesize the color difference data read from the image memories and 1H line memories. [emphasis added]¹¹

This passage has nothing to do with a second magnification unit that magnifies at least one further component signal of the color image signals ... *based on a ratio between the at least one component signal of the color image signals ... and the at least one further component signal*. The '203 patent is directed to a color misregistration reducing system for reducing color misregistration derived from field sequential imaging.¹² For example, the '203 patent describes how during an endoscopic examination mucous may adhere to an

¹⁰ Outstanding Office Action, page 8, lines 5-9.

¹¹ '203 patent, column 13, lines 43-53.

¹² '203 patent, column 1, lines 9-11.

objective at the tip of an endoscope, causing color distortion, or color misregistration.¹³ To solve this problem, the '203 patent describes changing a perceived color based on the **occurrence** of color misregistration. Thus, the '203 patent describes changing a color based on whether something (misregistration of a color) has occurred or not, but is silent on magnifying a component signal **based on a ratio between component signals**. Therefore, the '203 patent fails to cure the acknowledged deficiency of the '257 patent.

Further, Applicants respectfully submit that the '203 patent is silent regarding a second magnification unit, which performs magnification based based on a ratio between component signals, as discussed above, *and the magnified data of the at least one component signal magnified by the first magnification unit*, as recited by amended Claim 20.

Further, Applicants respectfully submit, and indeed the outstanding Office Action does not assert otherwise, that the '203 patent fails to cure the other deficiencies of the '257 patent described above. Therefore, Applicants respectfully that Claim 20 (and all associated dependent claims) patentably defines over any proper combination of the '257 patent and the '203 patent. Claim 52 recites analogous features to Claim 20. Thus, Applicants respectfully submit that Claim 52 (and all associated dependent claims) patentably defines over any proper combination of the '257 patent and the '203 patent.

Claim 24 is directed to an image processing apparatus including an input unit that inputs color difference image signals and luminance signals, and a magnification unit. The magnification unit includes a *luminance signal magnification unit that magnifies the luminance signal* using a magnification method that interpolates a luminance reference pixel area of a first extent. The magnification unit further includes a color difference signal magnification unit that magnifies the color difference signals using a magnification method

¹³ '203 patent, column 1, lines 32-34 and 64-67.

that interpolates a color reference pixel area of a second extent narrower as compared with the first extent, wherein predetermined color information included in the color difference image signals before magnifying the color image signals is retained even after magnifying the color image difference signals.

The outstanding Office Action asserts that the '257 patent describes a luminance signal magnification unit, and supports this assertion by referencing zooming unit B (element 234 of Figure 4b), and column 7, lines 37-43, of the '257 patent.¹⁴ However, it appears the outstanding Office Action misinterpreted the description in the '257 patent. Specifically, the '257 patent states:

In the zooming unit B (234), since a compression process performed by the image memory unit 208 at a later stage acts as a low pass filtering process, practically an enlargement process is performed. Of course, in a case where the zooming is not set, the image signals passes through the zooming unit B 234. Then, the outputs (C, M, and Y 8-bit image signals and 6-bit black character judgment signal) from the zooming unit B 234 are inputted into the image memory unit 208.¹⁵

It is clear from this passage that the '257 patent discloses that the zooming unit B outputs the signals C, M, Y, and K (cyan, magenta, yellow, and black). No luminance signal is output. Thus, zooming unit B does not magnify any luminance signal. Therefore, the '257 patent fails to teach or suggest a *luminance signal magnification unit that magnifies the luminance signal*, as recited by Claim 24. Applicants respectfully submit, and indeed the outstanding Office Action does not assert otherwise, that the secondary references (the '203 patent, the '137 patent, and the '252 patent) fail to cure the deficiencies of the '257 patent as discussed above. Accordingly, Applicants respectfully submit that Claim 24 (and all associated dependent claims) patentably defines over any proper combination of the cited references. Claim 56 recites analogous features to Claim 24. Accordingly, Applicants

¹⁴ Outstanding Office Action, page 10, lines 12-15.

¹⁵ '257 patent, column 7, lines 19-27.

respectfully submit that Claim 56 (and all associated dependent claims) patentably defines over any proper combination of the cited references.

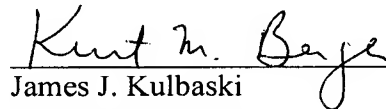
Regarding the rejection of Claims 26 and 58, Applicants respectfully submit that the '310 publication fails to cure the deficiencies of the '257 patent as discussed above.

Accordingly, for at least the aforementioned reasons, Applicants respectfully request that the rejections of Claims 20-21, 24, 26-27, 52-53, 56, and 58-59 under 35 U.S.C. § 103(a) be withdrawn.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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